

## **Amendments to the Claims**

Claims 1 – 22 (canceled).

23. (new) A method of detecting a low power condition in a local area augmentation system, comprising:

- receiving at least one global positioning satellite radio signal;
- measuring an average wide band power associated with the radio signal;
- measuring an average narrow band power associated with the radio signal;
- calculating a signal-to-noise ratio of the radio signal from the wide band power and the narrow band power;
- calculating a lower confidence limit of the signal-to-noise ratio;
- determining, from a lower confidence limit, a low-power condition error contribution,
- calculating a total error in a navigational measurement based at least in part on the low-power condition error contribution;
- determining whether the total error exceeds an alert limit; and
- issuing an alert if the error exceeds the alert limit.

24. (new) The method of claim 23, wherein determining the lower confidence limit subtracting a confidence offset from the calculated signal-to-noise ratio.

25. (new) The method of claim 24, wherein the confidence offset  $dS/No_{low}$  is determined by the following equation:

$$P_{\text{lim}} = \int_{-dS / No_{\text{low}}}^{\infty} \text{pdf}(x) dx.$$

26. (new) The method of claim 23, wherein measuring a wide band power includes averaging the wide band power over the first time period to obtain a value  $P_w$ , and wherein measuring a narrow band power includes averaging the narrow band power over the second time period to obtain a value  $P_n$ .

27. (new) The method of claim 26, wherein the first time period has a length  $T$ , the second time period has a length that is  $M$  times as long as  $T$ , and the signal-to-noise ratio  $S/No$  is calculated according to the following equation.

$$S/No = 10 \log_{10} \left[ \frac{1}{T} \frac{P_n - P_w}{MP_w - P_n} \right]$$

28. (new) The method of claim 23, further comprising:  
determining a navigational measurement based at least in part on the received radio signal;  
wherein the low-power error contribution is an error in the navigational measurement.

29. (new) In a local area augmentation system, a system for detecting a low-power condition comprising:

- a receiver operative to receiving at least one global positioning satellite radio signal;
- a wide band power estimator operative to measure an average wide band power;
- a narrow band power estimator operative to measure an average wide band power;

a signal-to-noise ratio module operative to determine a signal-to-noise ratio from the estimated wide band power and the estimated narrow band power;

a confidence limit logic module operative to calculate a lower confidence limit of the signal-to-noise ratio;

a total error module operative to calculate a total error based at least in part on the lower confidence limit; and

alert logic operative to determine whether the total error exceeds an alert limit and to issue an alert if the error exceeds the alert limit.